

REMARKS

Pending Claims

Upon entry of the foregoing amendment, 24 claims are pending in the application. Of the pending claims, 6 claims are independent. These numbers include the claims that have been withdrawn by the Examiner.

Claim Rejections under 35 USC § 102(b)

The Examiner has rejected claims 1, 14, 15, 17, and 19 under 35 USC § 102(b) as being anticipated by Parmentar et al. (US Pat. 4,664,315). However, as the Examiner has failed to make a *prima facie* case for anticipation under section 102(b), Applicant respectfully requests that this rejection be withdrawn.

Among other elements, claims 1 and 14 call for “a grounded nozzle.” However, a careful reading of Parmentar et al. shows that the nozzle is in fact not grounded. The specification of Parmentar et al. states that the nozzle body 12 (col. 4, line 56), the air nozzle 28 (col. 4, lines 66-67), the nozzle nut 30 (col. 4, line 67 through col. 5, line 1), the swirl plate 64 and gasket 66 (col. 5, lines 50-53) are all formed of “dielectric [i.e. non-conducting] material”. Since these parts, in particular the swirl plate 64 and the nozzle 74 which projects therefrom, are non-conducting, they are also therefore not grounded.

Parmentar et al. in fact teach away from the use of a grounded nozzle. Starting at col 7, line 35, Parmentar et al. specifically state that it is preferable in their invention not to have any

parts near the nozzle grounded because of the possibility that liquid droplets could accumulate in the nozzle region and produce a liquid path between the electrode 48 and ground, thereby reducing the efficiency of induction charging (see, e.g., col. 8, lines 5-8). Furthermore, Parmentar et al. note that grounding of the sprayed liquid occurs via the grounded supply tank (col. 6, lines 63-66).

As to claim 17, Parmentar et al. also fail to teach or suggest the element of providing a grounded conductive cover around the nozzle and electrode. It is unclear whether Parmentar et al. teach or suggest a nozzle and/or electrode cover at all. However, to the extent that any external portion of the device of Parmentar et al. might be considered a cover, for example the nozzle body 12, the nozzle nut 30, or the air nozzle 28, all of these components are clearly stated to be made of dielectric, i.e. non-conducting, material.

Thus the Examiner has failed to make a *prima facie* case for anticipation under 35 USC § 102(b) for the above-listed claims, and as such this rejection should be withdrawn.

Claim Rejections under 35 USC § 103(a)

The Examiner has rejected claim 20 under 35 USC § 103(a) as being unpatentable over Parmentar et al. However, as the Examiner has failed to make a *prima facie* case for obviousness under section 103(a), Applicant respectfully requests that this rejection be withdrawn.

In addition to the arguments presented above with regard to the ‘grounded nozzle’ claim element, Parmentar et al. also fails to teach, motivate, or suggest the resistivity range of claim 20. Nowhere in the Parmentar et al. application is there a discussion of the appropriate level of

resistivity of the material that is to be electrostatically sprayed using the described apparatus.

Thus, there is no teaching, suggestion, or motivation in Parmentar et al. to use material having resistivity in the range specified in claim 20. As such, the Examiner has failed to make a *prima facie* case for rejection of claim 20 for obviousness in view of Parmentar et al. and thus this rejection should be withdrawn.

Allowable Subject Matter

Applicant gratefully acknowledges the Examiner's recognition of the allowability of claims 21 and 22. However, in light of the arguments set forth herein, Applicant submits that all of the claims are allowable over the cited art of record and thus there is no need to rewrite claims 21 and 22 per the Examiner's instructions.

Withdrawal of Claims 2-13 and 16; Reinstatement of Claims 17 and 20-22

The Examiner has previously withdrawn claims 2-13 and 16, stating that these claims are part of the non-elected inventions. Given that claim 14 is allowable over the cited art of record, Applicant respectfully submits that the withdrawal of these claims is improper and requests that these claims be reinstated.

Applicant gratefully acknowledges the Examiner's reinstatement of claims 17 and 20-22 for examination.

New Claim 25

Entered herewith is new claim 25, which depends from claim 14. Claim 25 is completely supported by the originally-filed application, as discussed below.

All of the figures (drawings as well as photographs) of the originally-filed application depict the electrode as being downstream of the nozzle, i.e. separated from the nozzle in the direction of the spray. Furthermore, Figures 2 and 3 and the accompanying text in paragraph [0036] of the published application (Pub. No. US 2004/0050946) discuss the importance of matching the shape of the electrode to the pattern of spray, which would only be relevant if the electrode were positioned at a distance from the electrode in the direction of the spray. In addition, the text also mentions in paragraph [0038] a preferred embodiment wherein “the electrodes 55, 57 are positioned very close to a high pressure jet of particles 54 that the particles can pick up charges from the electrodes by direct or indirect contact and still have sufficient momentum to break away from the electrodes.” This latter embodiment only makes sense if the electrode is separated from the nozzle in the direction of the spray, as opposed to a lateral direction.

Finally, paragraph [0040] of the published application (Pub. No. US 2004/0050946) discusses tests that were performed to determine the optimal predetermined distance between the nozzle and the electrode, which was found to be 1.1 inches:

Tests were performed to determine the optimized critical dimensions and parameters of the sprayer components. Spray efficiency was measured for various values of electrode to nozzle spacing, 0.3, 0.6, 0.9, 1.2, and 1.5 inches. The significant improvement with a broad peak was obtained for the range of 0.8 to 1.4 inches. In a preferred embodiment, the electrode is positioned 1.1 inches from the nozzle, which has a 0.018 inch diameter orifice. ... The electrode opening was

varied for other tests with the width ranging from 0.2 to 1.0 inches, while the electrode to nozzle spacing was 1.1 inches. High spray efficiency was achieved for a width in the range of 0.4 to 0.8 inches. In a preferred embodiment, the best results are obtained for a width of 0.6 inches.

Paragraph [0040] of Pub. No. US 2004/0050946 (Emphasis added).

That the electrode is separated from the nozzle in the direction of spray, as opposed to laterally, is indicated by the fact that this paragraph also discusses “other tests” performed with different electrode opening widths, at a fixed electrode to nozzle spacing of 1.1 inches. Had the initial discussion in this paragraph been referring to the distance from the nozzle to the electrode in a lateral direction, then the subsequent discussion about varying the electrode opening size would be inconsistent with the earlier discussion of the electrode to nozzle spacing. Therefore it is clear that the electrode to nozzle spacing, which was found in one case to be optimal at 1.1 inches, is in the direction of the spray and not in a direction lateral to the nozzle.

Conclusion

Applicant respectfully submits that the independent claims are allowable over the prior art of record, including the cited references. For similar reasons, and for the additional reasons set forth above, Applicant urge that the dependent claims are also allowable.

Furthermore, since claim 14, which is generic to all claims in the application, is allowable, Applicant respectfully requests that the election and restriction requirement be removed and all withdrawn claims be re-entered and allowed.

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all

presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,

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